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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,599	12/12/2003	Scott A. Meyer	GUID.142PA (03-100)	1644
51294	7590	09/21/2006	EXAMINER	
HOLLINGSWORTH & FUNK, LLC			ALTER, ALYSSA M	
8009 34TH AVE S.			ART UNIT	
SUITE 125			PAPER NUMBER	
MINNEAPOLIS, MN 55425			3762	

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/734,599

Applicant(s)

MEYER ET AL.

Examiner

Alyssa M. Alter

Art Unit

3762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments, see page 13, filed June 7, 2006, with respect to the rejections of the pending claims have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Schroepel (US 5,431,693).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6, 8, 10-11, 13-25, 31-41, 44-49 and 51-61 are rejected under 35 U.S.C. 102(b) as being anticipated by Schroepel (US 5,431,693). Schroepel discloses that "abrupt slope changes in the second derivative are used to detect morphological features indicative of capture which are otherwise often difficult to discriminate" (col. 2, lines 56-59). "If minimum and maximum amplitude excursions of the second derivative signal occur within a selected window of time following delivery of the cardiac stimulation pulse, and if the amplitude difference between the minimum and maximum exceeds a reference value, then capture is determined to have occurred. (col. 2-3, lines 68 and 1-6, respectively).

Schroepel further discloses the "first window of time from about 40 msec to about 70 msec after delivery of the stimulating pulse" (col. 6, lines 43-46) and a second

Art Unit: 3762

window from  $t=70$  and  $t=100$ , as seen in figure 9. "In the event that application of the method described above and illustrated in FIG. 9 results in a determination of non-capture as of the end of the first window of time at  $t=70$ , as indicated by box 108, it may nevertheless be useful to continue to look for intrinsic contractions that are manifested within that portion of the extended window of time from  $t=70$  to  $t=100$  ms. This can be accomplished by comparing the absolute value of the waveform amplitude  $A$  to the absolute value of  $Ref_2$  from  $t=70$  to  $t=100$ . If the absolute value of  $Ref_2$  is exceeded during that time period, it will be determined that a non-capture was followed by an intrinsic contraction" (col. 8, lines 5-17). *The examiner considers the amplitude to be the morphological features.*

As to claims 4-5, 10-11 and 44-46, "this allows use of unipolar pacing between the lead tip and the pacer can without requiring a separate ring electrode for capture detection. Alternatively, bipolar pacing between the lead tip and ring electrode can be used without requiring a third electrode"(col. 5, lines 18-23).

As to claims 6, 8, 40 and 41, "the pacing/sensing electrodes 50 and 56 and corresponding conductors 48 and 54 also conduct sensed cardiac electrical signals in the right atrium and right ventricle to the atrial and ventricular sense amplifiers 40 and 42, respectively"(col. 4, lines 64-68).

As to claim 17, there is a delay between the two windows. The delay between the two windows is 0 ms, since the two windows are successive.

As to claims 21-22, "another advantage is that non-capture can be detected within 70 ms after delivery of the pacing pulse, which is early enough to permit a backup pacing pulse to be delivered immediately, if desired"(col. 5, lines 25-28).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

1. Claims 7, 9 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroepel (US 5,431,693). Schroepel discloses the claimed invention except for delivering pacing stimulation to the left ventricle and left atrium. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the heart chambers that receive the electrical stimulation as taught by Schroepel with the left heart chambers since it was known in the art that stimulation may be delivered to either the right or left atrium or the right or left ventricle. Such a modification would enable the electrical stimulation system to be modified to meet specific patient needs.

Art Unit: 3762

2. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schroepfel (US 5,431,693) in view of Zhu et al. (US 6,226,551). Schroepfel discloses the claimed invention except for using an electrode combination that reduces a pacing artifact signal relative to an evoked response. Zhu et al. teaches that it is known that "the amplitude of pacing artifact may be so great that it becomes difficult to distinguish the amplitude corresponding to an evoked response with the amplitude corresponding to artifact. Hence, there is a need for a capture verification circuit of a cardiac rhythm management device capable of differentiating between the amplitude corresponding to evoked response and the amplitude corresponding to artifact of a sensed signal." (col. 3, lines 6-14). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the pacemaker as taught by Schroepfel with the pacemaker having electrodes that reduces a pacing artifact signal relative to an evoked response as taught by Zhu et al., since such a modification would not hinder the detection of an evoked response.

3. Claims 26-30 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schroepfel (US 5,431,693) in view of Lindgren (US 6,238,419). Schroepfel discloses the claimed invention except for the classifying the cardiac response as a fusion/pseudoperfusion beat. Lindgren teaches that it is known to detect a fusion and/or pseudofusion heartbeat, for the purpose of enabling a reduction in the energy used for stimulating a heart. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the pacemaker as taught by Schroepfel with the pacemaker having the ability to detect fusion and/or pseudofusion

Art Unit: 3762

heartbeat as taught by Lindgren, since such a modification would enable a reduction in the energy used for stimulating a heart in order to extend the longevity of a battery powered heart stimulation device.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alyssa M. Alter whose telephone number is (571) 272-4939. The examiner can normally be reached on M-F 9am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

✓  
GEORGE R. EVANISKO  
PRIMARY EXAMINER  
9/15/6

*Alyssa M. Alter*  
Alyssa M Alter  
Examiner  
Art Unit 3762